REMARKS

Introduction

Claims 1-17 were pending. Claims 1, 12 and 17 are independent. Claims 1, 2, 12, 14 and 17 have been amended. Claims 3-6 have been cancelled.

Objection to the Drawings

The Examiner objected to FIG. 2 of the drawings for having a reference number not mentioned in the specification. Applicant hereby attaches a replacement drawing of FIG. 2 to this Amendment with reference 200 removed. Withdrawal of the objection to FIG. 2 is respectfully requested.

Rejections under 35 U.S.C. § 112

The Examiner rejected claims 1-11 and 17 under 35 U.S.C. 112, second paragraph, because in Claims 1 and 17, it is allegedly not clear how the system is to continue "repeating." The Examiner asserts that if the system continually receives and repeats, then the list would never become empty. Applicant has addressed this concern by removing old step (c) containing "repeating," and replacing it with "(d) receiving at least one message indicative of either creation or deletion of at least one of the processes; (e) updating the list of active processes in the network based on the received at least one message list." In this way, processes are added and deleted from the list as they occur. It is theoretically possible that not all of the added processes are eventually deleted, but this may be the proper behavior of a program incorporating the present invention. The problem is obviated since the Q-Manager is persistent. In general, all of the processes are eventually deleted unless a programmer has inadvertently programmed a memory leak. Withdrawal of the 35 U.S.C. 112 rejection is respectfully requested.

Rejections under 35 U.S.C. § 101

The Examiner rejected claims 12-16 as being directed to non-statutory subject matter. More particularly, Claim 12 recites a software component called a Q-Manager and a list, but no hardware on which these elements are operated upon. Applicant has amended claim 12 to recite a "processor" which processes the Q-Manager and list. Withdrawal of the 35 U.S.C. 101 rejection is respectfully requested.

Rejections under 35 U.S.C. § 102(e)

Claims 1-3 and 7-17 stand rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent Application Publication No. 2003/0225870 (Sandadi et al.). Sandadi et al. discloses methods, functional components and structures for carrying out management of client/server processes operating within separate process spaces within a computer system. An active server component process maintains a list structure identifying each client process that is currently using one of the server component process's interfaces. When a new client references a server, the list structure is augmented to include the system identification (e.g., handle) assigned by the operating system to the client process. A thread within the server process blocks while awaiting a triggering event (e.g., a client process in the list terminates). When the client process terminates, the block on the thread releases and the thread processes the change in client references. If the list of clients within the structure reaches zero, then the server process can immediately terminate.

In contrast to the methods, functional components, and structures described by Sandadi et al., amended claims 1, 12, and 17 of the present application, respectively recite, *inter alia*, a method, system and computer readable medium configured to execute steps for (a) receiving a message indicative of the creation of an initiating process of the network of processes by an

automated persistent software process (Q-Manager); (b) creating a list of active processes in the network in response to step (a) by the Q-Manager, the list having the structure of a directed acyclic graph, wherein the plurality of processes are represented as nodes of the graph and wherein events associated with the plurality of processes are represented as edges of the graph; (c) inserting a node representing the initiating process as the root of the graph (list); (d) receiving at least one message indicative of either creation or deletion of at least one of the processes; (e) updating the list of active processes in the network based on the received at least one message list; (f) sending a notification message indicating completion of the network of processes if the list becomes empty.

In response to a request from a client process, a server in Sandadi et al. dynamically creates a server process which then manages a list of client processes that are created and deleted by a client process. The server process is made to terminate when all the client processes complete. Thus, the server process which manages the client process exists for only a transient period of time and is dedicated to managing only one list of client processes. In contrast, the present invention makes use of a Q-manager, which is persistent. The Q-Manager manages a network of processes and exists before that network is created and exists after that network terminates. This provides the advantage that the Q-Manager can manage many process networks over time, and potentially manage more than one at a time simultaneously. The Examiner admits that Sandadi et al. does not explicitly disclose that the list of amended claims 1, 12, and 17 is constructed as a directed acyclic graphs, which has been incorporated into claims 1, 12, and 17 from original dependent claim 4. Furthermore, there is no disclosure, teaching, or suggestion in Sandadi et al. that the nodes of the managed list represent the processes and the edges represent events occurring between processes. Still further, there is no disclosure in

Sadadi et al. that an initiating process is incorporated into the list as the root node of the list. The Examiner asserts that placing the initiating process as the root of the list is disclosed on page 2, paragraph [0010] of Sandadi et al. All that is mentioned in paragraph [0010] is that processes are added to the list without specifying how they are added. More specifically, Sandadi et al. states that "In response to receiving an initial request from a client process for a service provided by the server process, a client process identification corresponding to the client process is added to the list."

Accordingly, applicant submits that Sandadi et al. does not disclose or teach the invention recited by amended claims 1, 12, and 17 of the present application. Claims 2, 3 and 7-11 ultimately depend from claim 1; and claims 13-16 ultimately depend from claim 12. Since claims 1, 12, and 17 have been shown to be patentable, the claims depending therefrom are likewise deemed to be patentable, for at least the reasons described above with respect to the patentability of claims 1, 12, and 17.

Rejections under 35 U.S.C. § 103(a)

Claims 4-6 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Sandadi et al. in view of U.S. Patent Application Publication No. 2001/0049712 (Leymann et al.). The rejection of claims 4-6 are rendered moot in light of Applicant's cancellation of these claims. However, the limitations of these claims have been incorporated into amended independent claims 1, 12, and 17. Applicant asserts that Claims 1, 12, and 17, and claims dependent therefrom, are independently patentable over Sandadi et al. in view of Leymann et al.

Leymann et al. fails to correct all of the deficiencies of Sandidi et al. Leymann et al. describes a method of optimizing a workflow management system (WFMS), the method being executable by the WFMS on at least one computer system. The WFMS accesses a database

comprising of at least one process model and instantiations of the process model (process instances). The method contemplates transferring objects of the database to an archive database (archive function). This transfer is preferably carried out in case that a predetermined event occurs or if these objects are not currently used by the WFMS. Preferably the objects to be transferred to the archive database are process instances. The implementation of the method includes process definitions. Process definition includes modeling of activities, control connectors between the activities, input/output containers, and data connectors. A process is represented as a directed acyclic graph with the activities as nodes and the control/data connectors as the edges of the graph. The graph is manipulated via a built-in graphic editor.

While Leymann et al. models process and connectors of a WFMS as a directed acyclic graph, there is no disclosure in Leymann et al. that the graph is managed by an automated persistent software process. There is no indication in Laymann et al. that the graphics editor component that maintains the graph is persistent, and if the graphics editor program is considered as a persistent process, it is not automated, since it requires at least some human intervention by a user to maintain the graph. Furthermore, there is no disclosure, teaching, or suggestion in Leymann et al. that an initiating process is incorporated into the list as the root node of the list. Still further, a process is represented as the entire acyclic graph with activities as nodes and control/data connectors as edges of the graph. The present invention models processes as the nodes of the graph, not the entire graph.

Accordingly, Applicant submits that neither Sandadi et al. nor Leymann et al., alone or in combination, discloses or teaches the invention recited by amended claim 1, 12, and 17 of the present application. Claims 2, 3 and 7-11 ultimately depend from claim 1; and claims 13-16 ultimately depend from claim 12. Since claims 1, 12, and 17 have been shown to be

patentable, the claims depending therefrom are likewise deemed to be patentable, for at least the reasons described above with respect to the patentability of claims 1, 12, and 17.

Conclusion

In view of the above remarks, reconsideration and allowance of the present application is respectfully requested. No fee is believed to be due in connection with this Amendment. If, however, any fees are deemed necessary for this Amendment to be entered and considered by the Examiner, then the Commissioner is authorized to charge such fees to Deposit Account No. 50-1358. Applicant's undersigned patent agent may be reached by telephone at (973) 597-2500. All correspondence should continue to be directed to our address listed below.

Respectfully submitted,

/Raymond G. Cappo/
Raymond G. Cappo
Patent Agent for Applicant
Registration No. 53,836

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DOCKET ADMINISTRATOR
LOWENSTEIN SANDLER PC
65 Livingston Avenue
Roseland, NJ 07068